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ABSTRACT

The purpose of this study was to determine the extent to which environmental factors pertinent to bibliographic instruction are represented in the library literature and to determine any changes in the female to male ratio of authors that may have occurred over time. In 1990 the Bibliographic Instruction Section (BIS) of the Association of College and Research Libraries (ACRL) issued a mission statement that recognized 10 environmental factors important to library instruction programs: Population; Home Environment; Schools and Learning; Work and Income; Information and Government; Information Industry Structure; Technology and Access; Public Libraries; Higher Education; and Scholarly Communication Patterns. Forty-seven bibliographic instruction articles were selected for content analysis from two journals recognized as forums for research in academic librarianship during four time periods between 1976 and 1992. The analysis focused on themes of articles and on words or phrases that reflect awareness of environmental factors. User needs (Population) was a frequently cited factor, and technological changes (Technology and Access), and changes in the student population (Higher Education) were somewhat less frequently cited factors. An examination of the authorship of the articles according to gender revealed that the female-to-male ratio has been larger in each succeeding period, with 50% female authorship of the articles in 1976-1977 and 76.9% female authorship of the articles in 1991-1992. (Contains 96 references.) (KRN)

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THE CONTEXT OF BIBLIOGRAPHIC INSTRUCTION: AN ANALYSIS OF THE JOURNAL LITERATURE

A Master's Research Paper submitted to the
Kent State University School of Library and Information Science
in partial fulfillment of the requirements
for the degree Master of Library Science

by

James A. Nelson

July, 1992

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ABSTRACT

The Bibliographic Instruction Section (BIS) of the Association of College and Research Libraries (ACRL), in 1990, cited as important environmental factors to consider in strategic planning for bibliographic instruction (BI) the following ten factors listed by Harold Shill in a 1987 College & Research Libraries article: Population, Home Environment, Schools and Learning, Work and Income, Information and Government, Information Industry Structure, Technology and Access, Public Libraries, Higher Education, and Scholarly Communication Patterns. An analysis of 47 BI articles published during four time periods between 1976 and 1992 found that in this literature, Population is a frequently cited factor, and Technology and Access and Higher Education are somewhat less frequently cited factors. An examination of the authorship of BI articles according to gender revealed that the female-to-male ratio is larger in each succeeding period, with fifty percent female authorship of the articles in 1976-1977, and 76.9 percent female authorship of the articles in 1991-1992.

CHAPTER I: INTRODUCTION

In early 1987, the Bibliographic Instruction Section (BIS) of the Association of College and Research Libraries (ACRL) formed an ad hoc committee to develop a strategic plan for BIS that would make it possible for the Section to take part fully in the kind of climate which had been strongly encouraged by the recently disseminated ACRL Strategic Plan.[1] The product of this committee's work would be the draft for "a strategic planning document that would be based on the ACRL Plan, that would be sensitive to other existing BIS, ACRL, and ALA planning documents, and that would nevertheless preserve BIS's uniqueness by identifying goals and objectives specifically related to instruction in academic and research libraries."[2]

Included in the 1990 Strategic Plan for the Bibliographic Instruction Section of the Association of College and Research Libraries (ACRL-BIS) is a general mission statement for that section concerning the importance of effective bibliographic instruction librarianship to the service goals of academic librarianship as a whole.[3] Following this Statement, four primary goals are enumerated, with up to five subgoals for each goal, and up to four objectives for each subgoal.

"Noting that the ACRL Plan included an environmental analysis, and recognizing the importance of environmental factors to library instruction programs,"[4] the Committee adapted the "10 environmental factors pertinent to the library's mission" recognized by Harold Shill in his 1987 College & Research Libraries article, "Bibliographic Instruction: Planning for the Electronic Information Environment."[5] According to Shill, environmental factors having an influence on bibliographic instruction, in addition to the widely recognized effects of new information

technologies, include social, political, economic, and institutional forces as well. The ten factors enumerated by Shill are:

Population
Home Environment
Schools and Learning
Work and Income
Information and Government
Information Industry Structure
Technology and Access
Public Libraries
Higher Education
Scholarly Communication Patterns

These external, nontechnological factors, according to Shill, are of great importance in any consideration of the future of academic libraries in the electronic information environment, and these "must be addressed if instruction for future information needs is to be adequate."[6]

To what extent are environmental factors, which together form the context of bibliographic instruction efforts in the academic library, mentioned in academic library research journal articles where the major subject content is bibliographic instruction? What similarities and differences may be discerned between the attention given to contextual factors in the current literature and the literature of one decade earlier, and of two decades earlier? What do the particular environmental factors cited say about trends of the journal literature of library instruction over a 20-year period? To what degree does the 1987 Shill-1990 ACRL/BIS assessment of the context of bibliographic instruction strategic planning parallel similar assessments found in past and present published research articles? What particular issues discussed in instruction literature -- issues such as overall planning for delivery of services, the employment of specific methods and/or materials for the program, administration issues, and evaluation issues -- tend to more frequently consider contextual variables? When such considerations do appear, which factors appear more and less frequently? The findings of the study may suggest a perspective from which to assess the practical influence of contextual factors on the research literature in the field, and to assess subsequent ACRL/BIS strategic planning guidelines, such as those new

guidelines which were in the process of being developed at the same time that the present investigation was being pursued.[7]

Purpose of the Study

The purpose of the study is to determine to what extent the "ten environmental factors pertinent to tjhe library's mission" identified by Harold B. Shill in his 1987 College & Research Libraries article, "Bibliographic Instruction: Planning for the Electronic Information Environment" are represented in the library literature.

Definition of Terms

Bibliographic instruction, as defined by the American Library Association, is:

> An information service to a group, which is designed to teach library users how to locate information efficiently. The essential goals of this process are an understanding of the library's system of organization and the ability to use selected reference materials. In addition, instruction may cover the structure of the literature and the general and specific research methodology appropriate for a discipline.[8]

Other terms, used either interchangeably with bibliographic instruction, or in clear preference to it by particular writers, include the acronym BI, and such other terms as bibliographic education, library instruction, library orientation, library user instruction, library user education, user education, and user instruction. The present writer will use the terms bibliographic instruction, BI, or library instruction, except in those instances where the particular research cited employs a particular alternative terminology.

The terms "environment" and "context" will be used interchangeably in this study, as will the terms "factors" and influences".

"Strategic planning," a term used in marketing theory, is a concept crucial to the preceding studies by Shill and ACRL/BIS which form the basis of the present study. An excellent definition of this concept,consistent with the nature of this study, is offered by Philip Kotler, as follows:

> Strategic planning is the managerial process of developing and maintaining a strategic fit between the organization and its changing market opportunities.[9]

In the present study, the "changing market opportunities" are the factors in the external environment influencing bibliographic instruction practice and literature. The "organization," which in the case of this study is the "supplier "of bibliographic instruction--the authors of the literature in the field as well as the organizations and intermediaries responsible for delivering the services to the "market"-- is concerned with monitoring changes in delivery of services that will assure the optimum "fit" between what it seeks to offer and what the market needs.

CHAPTER 2: REVIEW OF THE LITERATURE

The academic library community has long been interested in delivering for library users those instructional services that will best equip those users for the general, lifelong task of gaining access to the information services they require. This interest has been reflected in the quantity of material that has been published for this audience in recent years.

The large number of articles in Library Literature appearing under the four subject headings, "library instruction," "instruction in library use," "programmed learning," and "bibliographic teaching," has demonstrated a need in librarianship for the exchange of information related to these topics. From 1949 to 1960 (11 years), there appeared 247 entries under these topics; from 1961 to 1971 (10 years), 418 entries; and from 1972 to 1979 (7 years), 421 entries.[10] In the 1970-71 Library Literature, eighty-two references to articles about BI appeared; in 1988, 146 were listed.[11] In academic library journals published between 1964 and 1983, more than twice as many articles were published on bibliographic instruction than were published on the next most common topic.[12]

Of the bibliographies published on materials available, three have appeared in monograph form. In Deborah Lockwood's annotated Library Instruction: A Bibliography,[13] published in 1979, 366 of its 933 items, covering most thoroughly those items with publication dates between 1970 and 1979, concern BI in the academic library.[14] In Tian-Chu Shih's non-annotated Library Instruction: A Bibliography, 1975 through 1985,[15] 647 of its 1,065 entries concern bibliographic instruction in academic library settings.[16] Sybilla Avery Cook's Instructional Design for Libraries: An Annotated Bibliography included about 148 citations out of

677 (article titles and annotations do not always indicate the setting for instruction) concerned bibliographic instruction (or teaching in general) in academic settings and/or appeared in academic library journals.[17]

Many aspects of the periodical literature of librarianship have been studied by means of some variety of content analysis. One of the more monumental efforts among the research studies of this genre, in terms of the amount of information about articles gleaned from one year of the journal lierature, is a study published in 1990 by Jarvelin and Vakkari[18] of 833 research and professional articles published in international journals of library and information science in 1985. This study broke down that literature, first, by topics covered, and then by research (54%) or professional (46%) classification. The research articles were analyzed further according to such other categories as: frequency of each topic's appearance in the literature, viewpoint on information dissemination (for example, information producer, information seller, intermediary, intermediary's organization, end-user, etc.), research strategy used (for example, empirical, and what method of empirical; or conceptual and what kind; mathematical or logical; bibliographic method; etc.), data collection method used (for example, questionnaire, observation, thinking aloud, content analysis, etc.), and whether the analysis was qualitative or quantitative. A 1991 study by Kumpulainen,[19] using a research design based on the work of Jarvelin and Vakkari, studied the 1975 international periodical literature of library and information science. User education was the specific subject of only one of 273 professional articles in the 1975 sample studied by Kumpulainen,[20] and only four of 449 research articles and six of 384 professional articles in the 1985 sample studied by Jarvelin and Vakkari.[21]

Stephen E. Atkins studied 2,705 research articles in nine journals of librarianship published from1975 to 1984: ASIS Journal, American Libraries, College & Research Libraries, Information Technology and Libraries, Journal of Academic Librarianship, Library Journal, Library Quarterly, Library Resources and Technical Services, and Library Trends.[22] In this sample, bibliographic instruction was found to constitute the primary subject content of seventy-one articles, the secondary content of thirteen articles, for a combined total of eighty-four articles, or

1.7 percent of the sample. A year-by-year analysis of publication trends, by primary-secondary subject content, revealed that the number of articles in this category from 1975 to 1984 showed "a slow start and finish but with a number of boom years in between:

> Few articles on bibliographic instruction were published between 1975 and 1978 and between 1983 and 1984. However, from 1979 to 1982, nearly 60 percent of the contributions on this subject in this sample appeared. This surge of popularity was not the product of special editions by any journal, but instead it was an unsolicited outpouring of writings on this subject. The corresponding decline after 1982 seems the result of an oversaturation of research on this topic rather than a long-term drop-off in popularity. Bibliographic instruction topics have an active constituency that will demand more research on this issue during the next decade."[23]

The results of the present study of bibliographic instruction contextual factors may offer data which offer further insight from this perspective on the "boom years" for bibliographic instruction identified by Atkins: the sample examined for this study includes a twelve-month period (1981-82) within these "boom years."

A 1991 article by Lois Buttlar, "Analyzing the Library Periodical Literature: Content and Authorship," analyzed the content of some sixteen journals selected from general titles and specialized titles in librarianship.[24] At least some research-based articles were included in each of the titles in the sample. (Research Strategies, a research journal specializing in bibliographic instruction, was not among the journals under study for this research.) This study revealed that, in terms of the number of pages devoted to the various subjects in the research literature during the period of publication under scrutiny for this study, January 1987 through June 1989, bibliographic instruction ranked eighteenth, with 235 pages, or 1.39% of the total pages in the journals examined.[25] Another finding of this study was that, of the forty-nine authors of articles on bibliographic instruction in this sample, forty-one (83.67%) were females and eight(16.33%) were males, a females-to-males author ratio that was exceeded only by the ratio of females to males in child/young adult services research authorship, ten(90.1%) females to one(9.09%) male![26]

Numerous other studies using content analysis methodology, in addition to those already cited, have analyzed research articles for type or types of research method used.[27]

'hen Shill includes"scholarly communication patterns" in his list of ten environmental factors to be taken into account when doing bibliographic instruction programming, his main emphasis is upon those electronic systems, increasingly familiar to academic librarians, which facilitate formal and informal communication patterns among scholars.[28] It may not be possible, by means of content analysis alone, to discern any patterns in citations of scholarly influences by proper name, as, for example, a particular frequently cited article, the publication output of a particular frequently cited writer, or a particular published document such as the one by Shill which provides theoretical grounding for the present study, or the ACRL/BIS strategic planning document which sought to influence bibliographic instruction librarianship. Therefore, a citation analysis is employed in this research simply to bring to light any scholar or scholars whose influence upon bibliographic instruction may be measured by means of citations made by the authors whose work is the focus of this study.

Bracken and Tucker performed a citation analysis on 187 articles in thirteen library science journals in a study which covered the years 1980 through 1985[29]. They counted citations from library science publications, and from the literature of disciplines outside of librarianship, seeking to discern trends toward or away from "self-citation," or the extent to which scholarly publication within academic bibliographic instruction librarianship was influencing and being influenced by literature being generated from within librarianship. Their findings indicated that the rate of self-citation was similar to previous studies of this type, that is, roughly 75 percent from library and information science, 25 percent from subject disciplines (see also Peritz, 1981; Lehnus, 1971; Pierce, 1987).[30]

Bracken and Tucker also listed the authors cited in the articles in their sample population, and discovered that "fifty-one individuals accounted for about thirty-one percent of the citations..." and "more than one of ten personal author citations referred to Thomas J. Kirk, John Lubans, Raymond G. MacInnis, Patricia B. Knapp, Pauline Wilson, Mary W. George, Sharon A. Hogan, Larry L. Hardesty, Anne K. Beaubien, Nancy Fjallbrant, Willam A. Katz, Anne F. Roberts, or Topsey N. Smalley."[31]

The ten environmental factors for bibliographic instruction identified in Shill's 1987 article,[32] and endorsed for their importance in the 1990 ACRL/BIS Strategic Planning document[33] were considerations that appeared in the literature in the field, according to a search of the literature of bibliographic instruction. Each of these factors will be discussed briefly in the remainder of this section.

Factor 1: Population

The first of five key elements to consider when designing effective programs of bibliographic instruction, according to Marian D. Miller and Barry D. Bratton, the learners themselves are the number one external consideration for such efforts:

> Who are the learners, and what are their educational needs? Are they freshmen and, therefore, new to the library and to college life altogether? Are they nontraditional students who have been away from a formal learning environment for years? Are they international students for whom there are many cultural adjustments? Are they faculty members new to the campus or unfamiliar with the library resources? The learner must be the constant focus in the instructional design process."[34]

Dorothy N. Bowen speaks of an approach to an environmental factor which other writers have studied as well.[35] Her study stresses the importrance of "learning style," or "cognitive style," in the various members of the population with which bibliographic instruction must deal if they are going to make progress toward their goals. She quotes with approval a 1971 monograph in educational psychology: "Cognitive styles can be most directly defined as individual variation in modes of perceiving, remembering and thinking, or as distinctive ways of apprehending, storing, transforming and utilizing information."[36] Her study had its origins in her work as a librarian with African students, which led to her research into the literature of field-independent and field-dependent learning styles. The field-dependent style, shown through test scores to be characteristic of the greatest numbers of African students whom she was teaching, depends on visual means of instruction rather than auditory ones, for example, and necessitates in the instructor an approach which is not overly dependent on the classroom lecture approach.

Several articles in Library Trends, Winter 1991, are centered around issues related to learning styles.[37]

Among those learner populations of various social and cultural backgrounds who present special needs for alternatives to the traditional classroom approaches to bibliographic instruction, in addition to the nonwhite, the non-middle class, or the international student populations, is the older, "nontraditional" student population. Such students come to the academic setting, not directly from high school , but in many cases from years of life experiences in which learnings have come in work, family, and other social settings far removed from the traditional classroom environment.[38] If nearly fifty percent of the students on the college campus are nontraditional students,[39] traditional methods of instruction will need to be changed to meet the needs of this particular market for academic library services. Jean Sheridan's "Androgogy: A New Concept for Academic Librarians"[40] contains a useful discussion of the concept of teaching adults as contrasted with the traditional concept of "pedagogy," or the teaching of children.

The 1990 ACRL/BIS "Strategic Plan" contains each of Shill's ten environmental factors in summary form. Its summary of the Population factor is as follows:

* Declining higher education enrollment
* Student population more heterogeneous
* Declining traditional college-age population [41]

Factor 2: Home Environment

As home socialization patterns have changed, particularly over the past 25 to 30 years, so, inevitably have students' experiences, approaches and needs changed with respect to their patterns for learning and using information. Single-parent homes, and families in which both of the parents work outside the home, heavy television usage patterns, and the gap between home-computer users and those from less technologically advantaged homes together constitute a factor to be taken into account among other contextual factors influencing bibliographic instruction in academic libraries, according to Shill.[42]

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A 1987 survey of U.S. academic libraries by Mensching was compared with data gathered in 1979 for the same population.[43] The results indicate a similar number of libraries offering course-related or non course-related lectures in both years. Concurrently, the use of required BI sessions and/or library tours, and the amount of publicity, evaluation, and print and nonprint materials used showed an increase, while fewer credit courses, term paper clinics, and audiotape programs were being offered in 1987 than were offered in 1979. A direct relationship between the home environment and bibliographic instruction practice is not clearly demonstrated through a study such as this, but these figures, pointing to an increasing reliance on visual forms of instruction materials , may indicate one kind of response by bibliographic instruction professionals to this contextual factor - an increasing reliance on similar forms of information transmission to those forms to which students have become accustomed to experiencing in their homes.

The ACRL/BIS document summarizes the "Home Environment" factor discussed in the Shill article as follows:

* Changing family structure; more single-parent homes
* Children will read less, watch televisin more
* Technological gap will widen[44]

Factor 3: Schools and Learning

> It is hardly an exaggeration to say that now students often...spend half their time in the library finding out what they don't want to know, and the remaining half in getting confused notions of what they do want to know.

So concludes the 1883 annual report of the Columbia University president.[45]

Similar concerns are being voiced today. One of the factors influencing academic bibliographic instruction is not only the adequacy of learning brought with the student from the high school experience with libraries, but also the basic literacy with which the student is equipped for further education. "During the past twenty years," observes Shill, "elementary and secondary schools have experienced steady decline in the quality of instruction." This he attributes to "low teacher pay and prestige, retirement or resignation of many excellent teachers, higher-paying careers for women and increased discipline problems."[46]

The publication in 1983 of A Nation At Risk, the Report of the National Commission on Excellence in Education,[47] sounded the warning to educators, families, and students that "America's well-being is at stake."[48] In order to remedy the serious deficiencies found, recommendations were made which included the following: the strengthening of requirements for high school graduation; the institution of "more vigorous and measurable standards by schools, colleges, and universities; the better use of time in the school day, a longer school day, or a longer school year; and measures to improve the quality of teaching in the public schools.[49]

Libraries and The Learning Society studied A Nation At Risk, and the following year published, in booklet form, Alliance For Excellence: Librarians Respond To A Nation At Risk.[50] The thirteen recommendations put forward through this booklet were designed to assure optimum quality support of those programs in literary and user access to information which are provided through school media centers and public libraries.

The literature of academic library instruction includes a number of studies which address this Schools and Learning environmental factor. Mary M. Nofsinger surveyed academic libraries in Washington State concerning user instruction services offered to classes of high school students.[51] She found , for example, that thirty-four percent of forty-four respondent academic libraries (20% of community colleges, 62% of colleges, and 45% of universities) offered user education services to high school classes.[52] In addition, her survey compared the views of academic librarians on which basic skills/competencies are needed in academic libraries, on the one hand, to their estimates of the percentages of entering students who possessed those competencies, on the other: the smallest percentage difference between competencies considered important and estimated entering students' competencies was "Use library catalogs to find materials by author, title, and subject," 93% to 80%; the greatest discrepancy was for the skill/competency of "Develop a search strategy using library records," 70% to 7%.[53]

The ACRL/BIS summary of Shill's discussion of the "Schools and Learning" environmental factor for bibliographic instruction is as follows:

* Rising computer competencies among entering freshmen
* Students from schools with new library technologies will have higher expectations for information technology[54]

Factor 4: Work and Income

Academic libraries, according to Shill[55], must be cognizant of changes in the work and income environment: the market for the services offered by the academic sector of society, which includes academic libraries, demands of that sector for those instructional services which are perceived to be consistent with the best fit between student training and the "real world" job market, in which economic forces in society play a dominant role. This environmental factor for bibliographic instruction recognizes that the state of the labor market with respect to jobs and income offered is a force to be reckoned within the academic world.

This factor, in the ACRL/BIS document, following Shill, consists of such realities as these:

* Continued movement toward a knowledge-based society
* High-pay industrial jobs replaced by low-pay service jobs
* Gap will widen between demand for information and ability to pay for fee-based information services
* Some print products (for leisure) will be replaced by fee-based services[56]

Factor 5: Information and Government

Basically, this factor has to do with government policies and directives, including the expenditures of funds by government at all levels, and with government's support or lack of support for information collection and services. Shill's discussion[57] of these contextual factors is summarized in the ACRL/BIS document as follows:

* Government less active in data collection and dissemination
* Government less active in support of libraries
* Students from poorer states increasingly disadvantaged in exposure to information technologies
* Intra-state differences in students' library competencies will increase[58]

Factor 6: Information Industry Structure

Close to the core of librarianship,historically, and philosophically, has been the delivery of most information services free of charge to those users who ask for them. Recently, however, trends in for-profit consumer-oriented services, which deliver publishing not only to libraries, but to individual and corporate consumers as well, have come together to portend changes in the information industry. These changes, according to Shill, will take the form of further reductions in competition, "higher prices, increasing reliance on fee-based services, and the domination of the information sector by organizations whose primary concern is for profit, rather than the dissemination of knowledge."[59]

This environmental factor offered by Shill for bibliographic instruction to consider is summarized in the ACRL/BIS document as follows:

* Increased development of consumer information services
* Reduced competition/higher prices due to industry mergers
* Increased reliance on fee-based services[60]

Factor 7: Technology and Access

Atkins drew this conclusion from the results of his content analysis of subject trends in research journal articles in librarianship in general, published in 1988:

> Only the most dynamic subjects constitute the boom topics category. These issues are databases, library automation, and new technology. While there was interest in these matters in the 1970s, the growth in the number of articles with these subject contents has skyrocketed in the early 1980s.[61]

"What does (the growing availability of such innovations as end-user information retrieval systems) mean for library instruction?" asks Kenney.[62] "Do we supply students with ready-made bibliographies and statistical data retrieved from online information sources rather than teaching them search strategy?...Has automation and online retrieval terminated the need for library skills instruction?"[63]

"Many BI programs owe their existence and success to the 'user hostile' nature of the systems about which they teach. Replace these systems with others that are truly 'user friendly' and the whole purpose of the BI program is called into question," asserts Gorman,[64] whose

audacious summons is "Send for a Child of Four!" (and set about to create the "BI-less academic library").[65]

The ACRL/BIS's 1990 summary of the "Technology and Access" contextual factor enumerated by Shill for bibliographic instruction librarians to consider is as follows:

* Reports/articles, etc., increasingly in non-print format
* Advances in library automation and telecommunications continue
* Continued advances in expert systems
* Continued advances in optical disk technology
* Continued advances in desktop publishing and electronic document databases.[66]

Factor 8: Public Libraries

The role of public libraries in the environment for academic bibliographic instruction is discussed by Osborne[67] in his consideration of the backgrounds in library user instruction brought to the higher education setting by first-year college students, because, in his view, public libraries and academic libraries may be viewed as "united in their commitment to giving young people the means to use libraries effectively. Instruction in public libraries can be formal education to groups, or it can be informal, often as part of the reference service provided...."[68] He argues, agreeing with Shill and ACRL/BIS, that the bibliographic instruction program in the academic library must consider the public library context in planning effective strategies for meeting the information retrieval needs of present and future students.

Two brief phrases summarize the ACRL/BIS document's understanding of Shill's discussion of the importance of public libraries as part of the environment for academic bibliographic instruction:

* Poorer public libraries replaced by private competitors
* Well-funded public libraries will thrive[69]

Factor 9: Higher Education

According to Loomis and DeLoach, in their "Library Instruction Trends and Resources" discussion (1987):

> The impact of inadequate funding is complicated further for many universities and colleges by the problem of dwindling enrollments, particularly of traditional students.

> No facet of academia, including libraries, is immune to the demands for changes necessitated by these two macroissues. These concerns are exacerbated because they often create a politically-charged, highly competitive campus environment in which programs repeatedly are forced to demonstrate their value and success in order to survive.[70]

For the purposes of this study, the strategic planning concept of the organization as marketer seeking an optimum fit with its market (see Factor 1: Population) is most crucial. In this sense, the library is marketer of the value of new and existing services not only to the population which uses, or may use, its services, but also to the administration and faculty with which it is inextricably yoked, and with which it stands and/or falls. Insofar as the factors outlined by Shill and the ACRL/BIS fall under the umbrella of higher education/academic libraries services/bibliographic instruction services as seller of goods in a free market, the ACRL/BIS summary will fall under this factor; studies concerning the market external to higher education for which it seeks to be an influential force would be considered as falling under the heading for one of the other environmental factors. Here are the considerations discussed by Shill as restated in the ACRL/BIS document(present author's qualifying remarks in italics):

* Increasing number of non-traditional students *(Here, for higher education to deal with as marketer of services)*
* Increasing number of part-time students *(Here, for higher education as seller seeking to influence a market for services)*
* Increase in extension and evening instruction *(Here, for higher education as dealer in services for which there is demand)*
* Increase in international students *(Here, for higher education to deal with as marketer of services)*
* Enrollment growth in most applied disciplines *(Here, higher education as marketer of services demanded from it)*
* University/library-business relationships will grow
* More cooperation between libraries and computer centers[71]

Factor 10: Scholarly Communication Patterns

A bibliographic essay by Stephen K. Stoan documents nontechnological effects on bibliographic instruction from faculty research patterns in humanities, social sciences, and natural sciences.[72] (The literature of librarianship has tended to focus more on the uses made by the faculty of the information tools that are most familiar to reference librarians.)[73] Shill's discussion of this factor acknowledges the existence of these kinds of patterns, but primarily it enumerates

the technological developments which Shill sees as influential for changing both scholarly communication patterns and academic bibliographic instruction programs.[74]

The ACRL/BIS document states Shill's "Scholarly Communications Patterns" factor as follows:

* Importance and structure of "invisible" colleges will grow
* Problems for bibliographic/quality congrol will increase
* Increasing information overload experienced by researchers[75]

CHAPTER 3: METHODOLOGY

Two journals were selected for their importance as forums for research in academic librarianship[76] and for their historical acceptance by past researchers doing analysis of the journal literature in librarianship as being representative of the broad scope of interest in professional American librarianship which includes bibliographic instruction. These journals are The Journal of Academic Librarianship and College & Research Libraries.

Four time periods of publication dates were selected for the present study of this journal literature: July1976-June1977, July 1981-June 1982, July 1986-June 1987, and July 1991-June 1992. This selection allows for the best possible currency for the time in which this study is done, and provides opportunities to discern changes in environmental factors on bibliographic instruction, as reflected in the literature, over time.

"The term 'content analysis' denotes a family of research methods that attempts to identify and record the meaning of documents and other forms of communication systematically."[77] It is "a procedure designed to facilitate the objective analysis of the appearance of words, phrases, concepts, themes, characters, or even sentences and paragraphs contained in printed materials."[78]

The present study will be an analysis for themes of articles on bibliographic instruction issues, and for words or phrases which reflect awareness of environmental factors both external to the college/university organization and its component organizations (e.g., Factor 2: Home Environment) and internal to it (e.g., Factor 9: Higher Education). The categories enumerated by Shill[79] in his study of environmental factors on bibliographic instruction, and as summarized in a

1990 Association of College and Research Libraries-Bibliographic Instruction Section statement on strategic planning for that Section.[80] Those categories, as defined in that literature, will be broadly applied to include developments in the various systems - Population, Home Environment, Schools and Learning, Work and Income, Information and Government, Information Industry Structure, Technology and Access, Public Libraries, Higher Education, Scholarly Communication Patterns - as they appeared in the earlier journal literature being studied, as well as ways that they may have appeared in the literature from the more recent period. The material to be included on the coding sheets to be used in the study is included in Appendix C.

Only those articles, the major content of which is some bibliographic instruction issue or issues, will be used for the purposes of this study. The total number of articles of each issue of the journals under study will be counted, to determine percentages of articles devoted to bibliographic instruction during each of the four time period populations (See Appendix A). The author or authors of the articles in the sample population will be categorized according to gender, to the extent that that information can be discerned with reasonable certainty from the first name of the author or from editorial background material accompanying the article (See Appendix A).

CHAPTER 4: RESULTS

Forty-eight issues of The Journal of Academic Librarianship and College & Research Libraries were examined for the purposes of this study. Both of these journals are published bi-monthly, with six issues appearing every year, dated January, March, May, July, September, and November.

Out of a total of three hundred sixty-eight articles, forty-seven contain major content concerning instruction or education of library users. Thirty-one issues contain at least one such article, seventeen contain no such articles. The period when a bibliographic instruction (or BI) article is most likely to appear in one of the two journals is July 1991-June 1992, when nine of the twelve issues of the journals contain BI articles. A bibliographic instruction article is least likely to appear in these journals during the July 1976-June 1977 period, when six of the twelve issues include such an article and six do not. Although five of the six issues of The Journal of Academic Librarianship contain at least one bibliographic instruction article, only a single issue among the six issues of College & Research Libraries that year contains a BI article. The intervening periods, July 1981 to June 1982, and July 1986 to July 1987, are identical with respect to number of issues with BI articles(eight), and without BI articles (four). During the earlier of the two "mid-periods," 1981-1982, four of six College & Research Libraries issues contain no BI articles, while all six Journal of Academic Librarianship articles contain at least one such article; during the later "mid-period," 1986-1987, five of six College & Research Libraries issues contain articles on BI, while three of six Journal of Academic Librarianship issues contain articles on BI.

The academic journal literature population under study was analyzed for percentage of total articles published devoted to bibliographic instruction issues. During the July 1976-June

1977 period, 12.5 percent of the articles published (ten of eighty) concern BI issues. This percentage increased in the July1981-June 1982 period, as 17.5 percent of the articles published (seventeen of ninety-seven) are BI-focused articles. Of the four periods in which the journal literature was examined, the July 1986-June 1987 period shows the lowest overall percentage of BI articles, at 9.7 percent (ten of 103) of the articles. The latest (July 1991-June 1992) period shows a slight increase in percentage of BI articles, to 11.3 percent (ten of eighty-eight) articles. For a complete summary of bibliographic instruction/non-bibliographic instruction articles found in the journal population covered in this study, see Table 1.

Table 1

Bibliographic Instruction Articles in Academic Journals, By Issue

Journal	BI Articles/All Articles: Total Number of Articles N	BI Articles f	BI Articles %
The Journal of Academic Librarianship, 1976-1977	39	9	23.1
College & Research Libraries, 1976-1977	41	1	2.4
TOTAL, 1976-1977	80	10	12.5
The Journal of Academic Librarianship, 1981-1982	44	11	25.0
College & Research Libraries, 1981-1982	53	6	11.3
TOTAL, 1981-1982	97	17	17.5
The Journal of Academic Librarianship, 1986-1987	46	3	6.5
College & Research Libraries, 1986-1987	57	7	12.3
TOTAL, 1986-1987	103	10	9.7
The Journal of Academic Librarianship, 1991-1992	40	6	15.0
College & Research Libraries, 1991-1992	48	4	8.3
TOTAL, 1991-1992	88	10	11.3

Of those forty seven BI articles examined in the present study, forty-one (eighty-seven percent) refer to at least one of the environmental factors identified by Shill as having an influence on bibliographic instruction. Twenty-four (52.2 percent) of the articles refer to a single environmental factor, seven (15.2 percent) refer to two environmental factors, and another seven (15.2 percent) refer to three environmental factors. Two (4.3 percent) of the articles contain references to four environmental influences, and one (2.1 percent) of the articles contains references to five environmental factors. Table 2 describes the prevalence of environmental factors within the BI articles in the literature under study.

Table 2

Presence of Shill Factors in BI Articles, By Year

Year	Number of Shill Factors Per Article						Total BI Articles	
	0	1	2	3	4	5	f	%
1976-1977	1	9	-	-	-	-	10	21.3
1981-1982	5	4	4	3	1	-	17	36.2
1986-1987	-	6	1	2	1	-	10	21.3
1991-1992	-	5	2	2	-	1	10	21.3
ALL YEARS	6	24	7	2	2	1	47	100

Of the ten environmental factors identified by Shill, the user population (Population Factor) is given explicit consideration by authors of the articles in this study more often than any of the other factors in three of the four twelve-month periods of the journal literature. In 1976-1977, Population is the particular environmental factor mentioned in five of the nine BI articles in which an environmental factor is named (55.6 percent), and in five of the ten total BI articles in the population examined. Only two of the nine other environmental factors receive any mention at all, Information and Government in two (twenty percent) of the articles, and Higher Education in two (twenty percent) of the articles.

In 1981-1982, the most frequently mentioned of Shill's environmental factors is Higher Education, appearing in fifty-eight percent (ten of seventeen) of the BI articles. Technology and Access is mentioned during this period as an environmental factor in 35.3 percent (six of seventeen) of the BI articles.

In 1986-1987, the Population Factor is mentioned seven of the eighteen times that an environmental factor appears in an article during this period, and is a factor mentioned in seven of the total of ten BI articles published. The Technology and Access Factor is mentioned in four of ten (forty percent) of the BI articles, and the Schools and Learning Factor is mentioned in three of ten (thirty percent) of the BI articles.

In 1991-1992, the Population Factor is a consideration in six of ten (sixty percent) of the BI articles, and the Technology and Access Factor appears in five of ten (fifty percent) of the BI articles. The Information and Government Factor shows up as a consideration in three of ten (thirty percent) of the BI articles, the Higher Education Factor also in three of ten (thirty percent) of such articles, and the Public Libraries Factor in two of ten (twenty percent) of the BI articles.

Tables 3-6 describe each of the four academic library journal populations in the present study according to the frequency that each of the ten environmental factors enumerated by Shill is named among all the factors, and according to the distribution of the factors named among the BI articles in the study.

Table 3

Environmental Factors and BI Articles in Library Literature, 1976-1977

	Shill's Environmental Factors (N=9)		BI Articles (N=10)	
Variables	f	%	f	%
Population	5	55.6	5	50
Home Environment	0	0	0	0
Schools and Learning	0	0	0	0
Work and Income	0	0	0	0
Information and Government	2	22.2	2	20
Information Industry Structure	0	0	0	0
Technology and Access	0	0	0	0
Public Libraries	0	0	0	0
Higher Education	2	22.2	2	20
Scholarly Communication Patterns	0	0	0	0
	9	100	9	

Table 4

Environmental Factors and BI Articles in Library Literature, 1981-1982

	Shill's Environmental Factors (N=25)		BI Articles (N=17)	
Variables	f	%	f	%
Population	7	28.0	7	41.1
Home Environment	0	0	0	0
Schools and Learning	1	4.0	1	5.9
Work and Income	0	0	0	0
Information and Government	1	4.0	1	5.9
Information Industry Structure	0	0	0	0
Technology and Access	6	24.0	6	35.3
Public Libraries	0	0	0	0
Higher Education	10	40.0	10	58.9
Scholarly Communication Patterns	0	0	0	0
	25	100	25	

Table 5

Environmental Factors and BI Articles in Library Literature, 1986-1987

	Shill's Environmental Factors (N=18)		BI Articles (N=10)	
Variables	f	%	f	%
Population	7	38.9	7	70
Home Environment	1	5.6	1	10
Schools and Learning	3	16.7	3	30
Work and Income	0	0	0	0
Information and Government	1	5.6	1	10
Information Industry Structure	0	0	0	0
Technology and Access	4	22.2	4	40
Public Libraries	0	0	0	0
Higher Education	1	5.6	1	10
Scholarly Communication Patterns	0	0	0	0
	18	100	18	

Table 6

Environmental Factors and BI Articles in Library Literature, 1991-1992

	Shill's Environmental Factors (N=20)		BI Articles (N=10)	
Variables	f	%	f	%
Population	6	30	6	60
Home Environment	1	5	1	10
Schools and Learning	0	0	0	30
Work and Income	0	0	0	0
Information and Government	3	15	3	30
Information Industry Structure	0	0	0	0
Technology and Access	5	25	5	50
Public Libraries	2	10	2	20
Higher Education	3	15	3	30
Scholarly Communication Patterns	0	0	0	0
	20	100	20	

The combined totals for the frequency with which Shill's environmental factors appear in the journals, and for the percentage distributions of each of those factors with respect to both the other factors and the total number of BI articles in the four twelve-month periods in the present study, indicates that three of the factors clearly predominate among those which appear in the journals: Population, Higher Education, and Technology and Access. Twenty-five of forty-seven (53.2 percent) of the BI articles consider the user Population as a factor. In addition, the Population Factor is named twenty-five of seventy-two (34.7 percent) of all of those occasions when an environmental factor is identified in the literature.

Higher Education is a factor in sixteen of the forty-seven (34.0 percent) of the BI articles, and Technology and Access is a factor in fifteen of forty-seven (31.9 percent) of the BI articles. Information and Government is of some significance in the present BI literature populations, named in four of forty-seven (8.5 percent) of the BI articles examined. Of little significance in the journal articles are Home Environment (two of forty-seven, or 4.3 percent), Public Libraries (two of forty-seven, or 4.3 percent), and Scholarly Communication Patterns (one of forty-seven, or 2.1 percent). Not found at all in the articles examined are the factors Work and Income and Information Industry Structure.

Table 7 describes the combined totals for the frequency with which Shill's environmental factors appear in the literature population examined for this study.

Table 7

Environmental Factors and BI Articles in Library Literature, Combined Totals, 1976-1977, 1981-1982, 1986-1987, 1991-1992

	Shill's Environmental Factors (N=72)		BI Articles (N=47)	
	f	%	f	%
Population	25	34.7	25	53.2
Home Environment	2	2.8	2	4.3
Schools and Learning	4	5.6	4	8.5
Work and Income	0	0	0	0
Information and Government	7	9.7	7	14.9
Information Industry Structure	0	0	0	0
Technology and Access	15	20.8	15	31.9
Public Libraries	2	2.8	2	4.3
Higher Education	16	22.2	16	34.0
Scholarly Communication Patterns	1	1.4	1	2.1
	72	100	72	

The BI article authorship was examined by gender in order to discern any patterns in male-female distribution of published authors of BI articles in the journals. The female-to-male ratio among authors of such articles is found to be larger in each succeeding period. In 1976-1977, sixteen of the thirty-two authors are females, fifteen are males, and one has a name which does not clearly indicate the author's gender, for percentages of fifty percent female authorship, 46.9 percent male authorship, and 3.1 percent unknown gender authorship.

In 1981-1982, thirty of the forty-nine authors are females, seventeen are males, and two are unknown gender names, for percentages of 61.2 percent female authorship, 34.7 percent male authorship, and 4.1 percent unknown gender authorship.

In the 1986-1987 population of BI articles, sixteen of the twenty-one authors are females, and five are males, for percentages of 76.2 percent female authorship to 23.8 percent male authorship.

In 1991-1992, ten of the thirteen authors of BI articles are females, two are males, and one has an unknown gender name, for percentages of 76.9 percent female authorship, 15.4 percent male authorship, and 7.7 percent unknown gender authorship.

For the journal population as a whole, there are seventy-three female authors (61.7 percent), 39 male authors (33.9 percent), and four unknown gender authors (3.5 percent).

Table 8 describes the overall authorship according to gender, by year of publication.

Table 8

Publication of BI Literature by Author Gender, Year, and Overall Totals

Time Period	Females		Males		Unknown		Total	
	f	%	f	%	f	%	f	%
1976-1977	16	50	15	46.9	1	3.1	32	100
1981-1982	30	61.2	17	34.7	2	4.1	49	100
1986-1987	16	76.2	5	23.8	0	0	21	100
1991-1992	10	76.9	2	15.4	1	7.7	13	100
TOTAL	73	61.7	39	33.9	4	3.5	115	100

CHAPTER 5: SUMMARY AND CONCLUSIONS

Ten environmental considerations for bibliographic instruction administrators, practitioners and theorists were enumerated by Harold B. Shill in an article published in late 1987, and then re-emphasized for their value as factors to be considered for strategic planning by the Bibliographic Instruction Section of the Association of College and Research Libraries three years later. Several of those contextual influences are likely to be mentioned in the BI articles in academic journals, according to the findings of the present study. Frequently, one of these factors is likely to be a focal point for the BI article.

Attention was paid to the sources cited by name, either formally or informally, in the articles examined for this study, in the event that some conspicuous pattern be found manifested that would be worthy of documentation along with the analysis for environmental factors. It should be granted, at the outset, that scholarly communication via journal articles probably cannot be expected to dwell for long on any particular scheme, such as the scheme put forth by Shill, in a body of literature published five years after the original article, as the present study's 1991-1992 BI articles were. It may, however, be of some use to note that no explicit reference was made to either Shill or to the ACRL/BIS document, in any of the ten BI articles examined published after those articles appeared. However, insofar as some of the ten contextual factors named in those 1987 and 1990 studies did appear in the BI literature both before and after those studies appeared, there is indication that Shill and ACRL/BIS perceived some important influences which scholars in the BI field have found at least worthy of further mention. In the case of some of the factors, particularly aspects of Shill's Population Factor, they have been found worthy of in-depth study.

Characteristics of the library user population or populations are frequently-addressed concerns for BI articles in the library literature. Subpopulations included as environmental factors in the BI literature may be: faculty; older, "nontraditional," consumers of library services; minority subcultures, either from North American groups or from international groups; and even those whose patterns for learning how to use information may be connected to gender differences.

The Population Factor as defined by Shill encompasses many different populations. The present study was not designed to differentiate the kinds of populations with which individual articles may have been concerned. from one another. Further studies in this area may be designed specifically with different kinds of user populations in mind. Bibliographic studies focusing on the treatment of the faculty population, for example, in BI articles in the journal literature would be extremely useful for scholar-practitioners of library user instruction.

Factors which affect the kinds of resources and access to resources which may be found by users of information services and by professional providers of such services are included in the next-most-prominent of Shill's factors found in the journals examined for this study, namely, higher education, technology and access (as crucial areas of change for information providers), and information and government (as sources of funding and of information policies). All of these have much to do with the academic library's capacity to serve its users, according to the journal literature.

The examination of gender differences in the authorship of BI articles revealed that in each succeeding time period studied, a greater percentage of the authors are females. The appearance of a regular BI column edited by a woman in many of the two mid-period (1981-1982 and 1986-1987) issues of The Journal of Academic Librarianship used for this study weighted the results toward this direction in this aspect of the study, but because of the volume of mid-period BI articles published, it may not have made a significant difference to these findings had the editor of that BI column been a man. It would be interesting to study, by citation analysis, the male-female authorship of sources cited from BI articles appearing during different time periods in a larger population of journals than that with which this study used. Who are the most influential

sources being cited by authors of journal articles in library user instruction? Has this been changing over time? And if female influences on the BI literature has been itself a significant environmental factor, how has this manifested itself in the nature of the issues being discussed by BI librarians?

APPENDIX A: LOG SHEET: FOR CITATION ANALYSIS, EACH ISSUE USED

(Circle appropriate journal name and name issue date; fill in author information, each journal issue)

College & Research Libraries

The Journal of Academic Librarianship

No. Bibliographic Instruction Articles

No. non-Bibliographic Instruction articles

Number of pages

Number of pages

No. Female Authors

No. Male Authors

No. Unknown Gender

(Repeat, filling page with above checklist form)

APPENDIX B: ENVIRONMENTAL FACTORS

Environmental factors for BI articles for coding sheets, from Harold B. Shill, "Bibliographic Instruction: Planning for the Electronic Information Environment," College & Research Libraries 48 (September 1987): 439-446, and Rochelle Sager, "A Strategic Plan for BIS: How the Bibliographic Instruction Section Developed Its Plan," College & Research Libraries News 15 (September 1990): 778. (Coding sheets will be in the form of a checklist for each article, and include the tools in Appendices C, and D. See Appendix E.)

1 Population

2 Home Environment

3 Schools and Learning

4 Work and Income

5 Information and Government

6 Information Industry Structure

7 Technology and Access

8 Public Libraries

9 Higher Education

10 Scholarly Communication Patterns

APPENDIX C: CODING SHEET
(To be used with each article coded.)

_____AUTHOR 1 GENDER

_____AUTHOR 2 GENDER

_____AUTHOR 3 GENDER

_____AUTHOR 4 GENDER

_____AUTHOR 5 GENDER

_____AUTHOR 6 GENDER

_____AUTHOR 7 GENDER

_____POPULATION

_____HOME ENVIRONMENT

_____SCHOOLS AND LEARNING

_____WORK AND INCOME

_____INFO. & GOVERNMENT

_____INFO. INDUSTRY STRUCTURE

_____TECHNOLOGY AND ACCESS

_____PUBLIC LIBRARIES

_____HIGHER EDUCATION

_____SCHOLARLY COMMUNICATION PATTERNS

END-NOTES

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